

THE LEISURE HOUR.

BEHOLD IN THESE WHAT LEISURE HOURS DEMAND,
AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND.—*Cowper.*



IN AUNT CHARITY'S KITCHEN.

HIS ONLY ENEMY.

CHAPTER XXII.—HAS HE LOST HER?

TWO years had not come and gone without bringing some change into the little household over which Miss Charity Thorpe still held absolute sway. Towards the close of the previous autumn the end had come for the stricken old man, whom Ruth Holland had tended and watched with such unwearied devotion. His passing away had been

very peaceful, affording many consoling reflections to poor Ruth, to whom her stepfather had become even more endeared by his helplessness and utter dependence upon her. For a brief space before his death there had been a merciful lifting of the cloud, and the fine intellect of the thinker and scholar seemed to regain some of its vanished power; but Ruth knew that this mental revival was only like the last fitful flash of an expiring flame. He had petitioned to have the manuscript of his unfinished

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PRICE ONE PENNY.

work placed beside him, and his dim eyes had taken a wistful farewell of it when he signed for his step-daughter to take back the papers, saying, with a sigh, "There ends my dream, Ruth. I intended the proceeds of that work to be a provision for your future, but I have failed even in that, as I failed in everything else. Perhaps it is for the best. I was too ambitious, and I might have been puffed up with my own vanity, and not so willing to go home as I am now. My good, faithful girl, you are my only tie on this side the river, and my only regret. If I could have seen you married to some good man, worthy of you, one like Allen Harford. Ruth, I had a bit of romance about you two, for it was one of my heart's desires that you and he should get to care for each other; but the Lord knows what is best for us, and he will provide."

That was almost the last talk which Ruth had with her stepfather. His allusion to Allen Harford filled her with surprise, but she could not dwell upon it while she stood by that sick bed. She could only lay it up in her heart, to be pondered over at some future day. She had been very thankful that those half-rambling words of the old man had had no other listener besides herself. She felt her face flush whenever she thought of them, for no suspicion of Allen's long-cherished affection for herself had ever crossed her mind. The death of her stepfather had left a blank in Ruth's world, and she sorrowed for him with a very sincere and filial sorrow, though she was ready to acknowledge that it was well with him to have passed for ever from weariness and pain.

There is no better shield for a man's faults than the grave, no more potent peacemaker than death. Aunt Charity's long-standing antagonism to her brother-in-law had quite died out. She gave the memory of the dead all the charitable indulgence which she had denied to the living, and even found excuses for most of the failings in his character which had formerly caused her such irritation and annoyance. The aunt and niece still lived on at the cottage, and Ruth had not yet given up her school, though it was understood to be a failure. Since the old man's death she had commenced an evening school for older girls, who were unable to attend during the day, but this new effort had also proved unsuccessful, though she had obtained a few pupils, among whom was little Janey Spenser, who had soon won her way to Ruth's heart. From the first the teacher had felt herself strongly attracted to the shy, quiet little scholar, who seemed so unlike other girls of her age. It did Ruth good at that time to have her attention engaged and her sympathies roused by something outside the small space to which her world seemed to have been suddenly narrowed. Little Janey supplied a new element of interest, and thus unconsciously conferred a benefit.

It was the day on which Ruth gave her pupils their weekly half-holiday. Genuine April weather had prevailed throughout the morning, but the afternoon promised to be fine and bright. The ground had drunk in the welcome showers, which had given the air a pleasant sense of freshness. It was blowing freely through the open windows of the cottage, taking liberties with Aunt Charity's cap-strings, and running riot among the snowy pile of newly-dried linen which Ann had just brought in, for her mistress always insisted upon folding with her own hands certain portions of the family wash.

"Good afternoon, aunt." The voice was Ruth's, and gave the old lady a start, for her thoughts were busy as her hands, and she was falling into a reverie, possibly concerning Ruth herself. She turned quickly, her keen, bright eyes taking a softer expression as they scanned the slight figure standing by the open door. Ruth was dressed for a walk, and looked very fair and sweet in her deep mourning. Her delicate face, surrounded by folds of crape, looked like a pure white lily, set in that sombre frame. It was this delicacy that troubled Aunt Charity, for it indicated failing strength, and brought back sad thoughts of just such another flower-like face which had faded under her eyes as Ruth's seemed to be fading. Miss Thorpe was too practical and matter-of-fact to take alarm at trifles, or give much indulgence to mere fancy, but lately she had remarked that the girl seemed to be growing every day more like her mother, as she remembered her at the beginning of her last illness, and it had struck her as something ominous in connection with her niece. Was she to die, as her mother had died, before her life was half lived? Watching her narrowly, in the excess of her solicitude, the old lady had decided that Ruth's health was breaking down, and that medical advice would soon become a necessity, unless there was an early change for the better. Her mind was full of these anxieties, when she made her wistful inspection of Ruth, and said, "Going out, my dear? It is wise to make the best of a bright afternoon."

"Yes, aunt, I want to make a call at the cottage where Janey Spenser lives. I am afraid her father is worse."

"Spenser! that is the name of the poor man who was run over two nights ago. Do you know what Dr. Kemp says about him?"

"That it is a very serious case, to judge from what Janey says in her note. They have found out that it was a horse of Squire Raeburn's, and that Mr. Mosely and his groom were in the vehicle."

There was a slight shrug of Aunt Charity's shoulders as she replied, "Just what might have been expected. I always said that Clarence Mosely would end by breaking somebody's neck with his reckless driving. He was vain of it, as he was of everything connected with himself. I say that he ought to be severely punished."

"But, aunt," interposed Ruth, "it is found that he is not so much to blame as was at first supposed; it is reported that he was trying a horse for his uncle, and that it took fright. I hear that Mr. Mosely was thrown out, and so badly hurt that he had to be taken to The Elms, which was the nearest house."

"The Elms!" repeated Aunt Charity, with some surprise, adding, "I think Allen Harford never liked him."

"Possibly not, aunt, but from what I know of Mr. Harford I am convinced that he is not the man to allow any personal feeling to set aside the claims of humanity."

The old lady glanced curiously at her niece, then said, quietly, "No; I suppose not, my dear. It is a sad thing for that poor little girl of Spenser's; whatever will she do with no mother or any one about her? Stay, my dear, had you not better ask Ann to put up some of the new-laid eggs that came from Quarry Farm yesterday, and one of the pair of chickens might go with the eggs, if you could manage to carry them with you?"

Ruth readily seconded this benevolent suggestion. "I am glad you suggested taking the things, auntie, and very pleased that I have them to carry. Poor Janey! her little white face has been before me all day; my heart aches for the child! But there is the clock striking, I must hurry away or I shall not be back in time for tea."

"Very well, my dear, go at once; I don't suppose we shall have any visitors in your absence, and I think the walk will do you good."

A few minutes later Miss Thorpe heard the street-door close upon her niece. She had resumed her interrupted occupation, and was musing to herself as she went on busily adding to the neatly-folded pile before her, "Poor Ruth! I hope she will get that nonsense out of her head about answering advertisements for a daily governess, that would be even worse than the school; the girl's not strong enough, but she won't give way. She's a regular Thorpe. I used to think when she was a child that she would grow up like the Hollands (not that I have any fault to find with the family), but, as I often told my sister, they were not to be compared to our dear old father and mother. Yes—I should not care who heard me say it—I am proud to think that Ruth takes after mother, and is a true Thorpe, for it is an honour to belong to a good old stock that could in their day hold up their heads with the best of the county people."

This was one of the old lady's weak points, pride of belonging to an ancient Saxon family, who had once been extensive landed proprietors. Miss Charity had just finished her task, and was supplementing it by some forcible remarks to Ann, which that young damsel was intended to preserve for practical application. She was listening with the corners of her mouth drawn demurely down, and her round eyes fixed upon her mistress with an expression of the most profound gravity, when a loud knock at the door made her start forward with a force that brought her into collision with Aunt Charity, who drew back with a sharp exclamation.

"Why, what has become of the girl's wits that a knock at the door makes her jump in that silly way! Go and open the door at once, and try not to look as if you had been sleep-walking."

"Yes, ma'am," replied the girl, stifling a little giggle.

She reappeared after a few minutes, and announced that the visitor was Mr. Harford, and that she had shown him into the parlour. This unexpected visit was not as acceptable to Aunt Charity as it might have been at another time. It was, in truth, rather a disappointment, for she feared that it would oblige her to set aside numberless little things which she had decided to do during Ruth's absence. She only lingered to divest herself of her large working apron, and readjust her cap before the mantel-glass, for even Miss Charity was not sufficiently strong-minded to have arrived at a state of perfect indifference to the feminine question of regard for personal appearance. Providing herself with some knitting as an antidote against the evil of compulsory idleness, the old lady went to pay her respects to Allen, who had made considerable advance in her favour during the trouble-laden days which had bowed his spirit and isolated him so completely from society. After the customary civilities had been exchanged, and, as usual, characteristically abridged by Aunt Charity, who counted it waste of time, their conversation passed, through a sort of natural transition, to

the incident of the runaway horse and its disastrous results, of which a full report had been given in the columns of the "Deanfield Herald." Aunt Charity asked some questions concerning Clarence Mosely, who was still lying at The Elms, not being yet able to be removed. The information given by Allen confirmed what Ruth had said concerning the real cause of the accident, and acquitted the gentleman of much of the blame.

"Well, if he gets better it is to be hoped that it will be a warning to him for the rest of his life," remarked Aunt Charity, adding, "it is a sad case about that poor man Spenser. If what I hear is true, his injuries are likely to prove fatal. He has one little daughter, who is a scholar of Ruth's, and she is much concerned about the poor little thing."

Allen listened with deep interest while the old lady went on to tell him where her niece had gone that afternoon, information which he had been longing to ask for himself. This led the conversation to Ruth, and Allen's inquiry about her health introduced the subject that was such a burden on the mind of Aunt Charity. His evident solicitude warmed her into unwonted confidence. She told him all her fears about her niece, every word being an unconscious stab to Allen. If the old lady had been less preabsorbed, she would have noticed the paleness of his face when he interrupted her with an agitated "Surely—surely it is not so bad as you apprehend, Miss Thorpe? We must get her to seek advice."

Aunt Charity's knitting-needles trembled as she took up some stitches which she had dropped, and said, gloomily, "Ruth only tries to laugh me out of my anxiety. The truth is, Mr. Harford, the school is a failure, and I think she frets about it, and now she's got some nonsense in her head about being a daily governess. Poor child, she need not worry about independence and future provision. I fear I shall see her laid in her grave before I go myself!"

Allen remained silent, but there was a strong heave of his broad chest, and he shifted his chair nearer the open window, as if he felt the want of fresh air, and continued gazing steadfastly out at the little garden-plot, that was gay with fair spring flowers, which Ruth cherished just as lovingly as she had cherished them at Fernside. As he sat with the delicate perfume of the violets stealing into him, his heart went out in a sudden yearning of tenderness to Ruth. He pictured her in her narrow home working for daily bread, and drooping, failing by the way, while he had it in his power to offer her a home and social position, with all the comforts and refinements that wealth could give. Why should he go on making money, and drifting down to a lonely old age with a heart empty as the world would have become to him? Maurice was gone, and with him the necessity for the self-sacrifice which he had once resolved upon. He was free to speak of his love, and try to win her for his own. Should he avail himself of the present opportunity, and take the old lady into his confidence by confessing his regard for her niece? He was revolving this in his mind when two figures passed the window, two that he recognised with a strange sting of pain—Ruth Holland and Dr. Kemp's nephew and newly-installed partner, Dr. Charles. As they passed, the sound of his voice came into him, and he caught one sentence that was the destruction of his day-dream.

NOTES ON THE OLD PSALM AND HYMN-TUNE COMPOSERS.

BY THE LATE EDWARD F. RIMBAULT, LL.D.

I.

A CHAPTER or two of gossip about the old tunes, the composers, and the books they published for the use of congregations who took delight in the "singing of psalms and hymns," will not be entirely devoid of interest to those who take pleasure in the subject at the present time, whilst to those who profess no such love their historical value will not be ignored. Two fellow-workers in the same field—the late Rev. W. H. Havergal and the Rev. H. Parr—have, to a certain extent, cleared the way on the ground we have been labouring, and their efforts we most cheerfully acknowledge. They have not only furnished us with much information, but have cheered us in our task and rendered it more pleasant than it would have been without their aid.

The first book we shall notice is the metrical psalm-book published under the direction of Calvin, entitled, "Les Pseaumes de David, mis en rime Française, par Clement Marot et Theodore de Beze." Calvin was a decided promoter of congregational singing, though he was not, like Luther, a composer. He encouraged Theodore Beza to finish Clement Marot's French version of the psalms which he had published at Paris in 1540, with thirty, and again at Strasbourg in 1543, with fifty psalms. He also employed Guillaume Franc to compose and select melodies for the entire version, completing thereby its usefulness. There is some obscurity as to the date of the first appearance of these valuable melodies. According to Burney, the French psalter in metre was published in a complete form with the music in 1545. In this there appears to be an obvious error, as it could only have been that portion of the psalms translated by Clement Marot, who died in 1544. That this portion was adopted by Calvin and set to music appears clearly from his preliminary epistle, dated 10th June, 1543. A reference to the history of Theodore Beza will be sufficient to prove that the remaining portion of the psalms was (probably) not translated or published by him till the year 1559.

Dr. Burney has styled Franc an "obscure musician," an epithet which has been industriously repeated by many editors, who have entirely overlooked its absurdity and injustice. Franc has the best claim of authorship to the Old Hundredth, and many other well-known invaluable psalm-tunes; and, as Mr. Dibdin remarks, "supposing that he was unknown before the publication of his psalter, 'obscure' he certainly has not been since."

When Mr. Havergal wrote his "History of the Old Hundredth Psalm Tune" in 1854, the earliest copy of this grand old tune with which he was acquainted was in the complete version of the psalter printed by Crespin in 1561. But since he wrote, three earlier versions have been discovered, one in a Genevan psalter printed by Jean Crespin in 1553, another in a psalter printed by N. Barbier and T. Conteau (probably at Geneva) in 1559, and a third by Crespin in 1560. The earliest form is this:—



The Old Hundredth tune was known in England as early as 1561, when it appeared in the edition of Sternhold and Hopkins's Psalms of that year; and from this time forth it was included in every edition of that work. The name of the tune as the Old Hundredth is peculiar to England. In foreign psalters, especially in the French and the Dutch, the tune is set to the 134th psalm. From the days of the Reformation to the end of the seventeenth century it was commonly called in England the Hundredth Psalm-tune; but upon the publication of Tate and Brady's new version, its present title came into use. About a century or more ago it became the fashion to call it "Savoy," and under that name it appears in many collections of a subsequent date. The English form of the tune is precisely the same in notes as the Genevan copy, the only difference being that the second and third notes of the last strain are minims instead of semibreves. This strain consequently sings thus:—



The symmetry of the tune in this form, it has been remarked, is extremely beautiful. "Each of its four strains comprises four long and four short notes, uniformly but peculiarly disposed. The first note of each strain, to suit a line of eight syllables, is long, the next four short, and the remaining three long. But the three concluding long notes of each strain seem to bear a certain symmetrical melodic relation to each other. In the first strain they *rise* in close succession; in the second they *fall*. In the third and fourth strains precisely the same alternation is kept up. The peculiar progression of the long and short notes in each strain may be compared to the progress of a boat when breasting a succession of billows at sea. First poised for a moment on the top of a wave, it rapidly descends; then steadily labours up; is poised again, and so proceeds."

A number of English versions of this tune have appeared from time to time, some varying considerably as to the length of the notes. We have no hesitation in pronouncing all these to be printer's errors, or corruptions from the original model. One way is to write all the notes of equal length, thus causing that "barbarous and monotonous manner of singing psalms" which prevailed to a great extent at the beginning of the present century. The Continental copies have preserved the melody with singular fidelity to the original. The modern Parisian books present it in triple time, but the tune itself is otherwise unchanged. "Our English singers, however," according to Mr. Havergal, "have perverted the last strain of the tune; and the perversion is so established, that editor after editor, of a certain class, has printed it, in full belief of its authority." The alteration is this:—



Mr. Havergal dates the corruption from Fox's edition of Playford's Psalms, 1757, but it is of a much earlier origin, being found in Hart's "Melodies Proper for

the Psalms," no date, but certainly printed before 1720.

Some five-and-twenty years ago the newspapers of the day were triumphant in announcing "an interesting and important discovery respecting the Old Hundredth Psalm tune." It was stated that Mr. Oliphant, of the British Museum, had met with a very old book of Luther's, containing only his own tunes ("Geystliche Lieder," 8vo, Nuremberg, 1570), and that among them was the one which we call the Old Hundredth. This was considered as proof positive of the tune being Luther's, and, therefore, a full and satisfactory settlement of a long-pending question. But it turned out to be a hasty and premature announcement. The discovery was merely that of a tune resembling in some degree the Old Hundredth. It is this:—

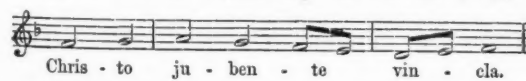


The first and fifth strains (the latter almost a repetition of the first) are certainly almost identical with it. The first three notes also of the third strain of the melody are the same as the first three of the third strain of our tune. But there is no other resemblance. The metre, too, is entirely different. Furthermore, this tune of Luther's is known in every Lutheran church on the Continent. It is No. 14 in Sebastian Bach's "Choral Gesang Buch," and is found in every other German choral book after Luther's time.

Mr. Havergal had an hypothesis that Francis's tunes for the Genevan psalter (for the most part) were rather fragmental compilations than original compositions, and with regard to the Old Hundredth tune, he adduced instances from the Gregorian Hymns to support his theory. This is by no means an untenable idea, and deserves every consideration. The instances of phrases in Gregorian Hymns resembling the Old Hundredth tune, are as follows:—



Su - a - vis Do-mi - ne, Et ex - ult - a - vit.



Chris - to ju - ben - te vin - cla.

And again:



The first strain of the Old Hundredth tune, as found in the above fragment, is so common that it would be troublesome to record all the known instances. Its use by so many composers—even by Luther himself, as in the melody before quoted—"proves that the early framers of psalm tunes were accustomed to consider certain stock phrases as common property, to be employed as might best suit their purpose."

If the Gregorian origin of this tune is proved—and of this there is little doubt—then it is very old,

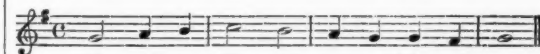
much older than is commonly imagined. To use the words of Mr. Havergal, "Its several strains had been sung by Christian voices not only a thousand years before Luther was born, but for centuries before the Papal system was developed."

"To the devout Christian," says the same writer, "such a tune cannot be otherwise than deeply interesting. The thought of its having been sung, for many an age 'in the great congregation,' must always add a hallowed pleasure to its use. The consideration, too, that Protestant martyrs and exiled confessors have listened to its strains or joined in them may well give an exalted and even an affecting energy to our modulation of them."

The Old Hundredth tune has long ago reached the other side of the globe, and it is not the least interesting fact of any that may be told respecting it, that it was the first tune ever sung at divine service, conducted by a clergyman, in New Zealand. The fact is detailed in the Missionary Visits of the Rev. S. Marsden to that country. When chaplain at Botany Bay, that eminently devoted man sailed to New Zealand as the pioneer of missionary exertions. His landing on the island, for the purpose of meeting some English residents and certain native chiefs at divine worship, is thus described by himself: "On the morning of Christmas Day, 1814, about ten o'clock, we prepared to go ashore, to publish for the first time the glad tidings of the gospel. When we landed at Wangarua, we found Koro-Koro, Duaterra, and Shunghee dressed in regimentals, which the governor had given them, and ready, with their men drawn up, to be marched into the enclosure to attend divine service. The inhabitants of the town, with some women and children and a number of chiefs, formed a circle round the whole. A very solemn silence prevailed. The sight was truly impressive. *I rose up and began the service with singing the Old Hundredth Psalm, and felt my very soul melt within me when I viewed my congregation.*"

The French psalter has held an undisputed place in the Reformed Church since its introduction to the present time—a fact not a little remarkable, and the Old Hundredth tune has been introduced into the psalters of other countries, and become universal all over the Protestant world.

We may mention another fine old melody in the Calvinistic psalter which has exercised a powerful influence over the feelings of men on many occasions—the spirited 124th tune, beginning thus:—



Oh, still may Is - rael now re - joice and cry.

This tune is supposed to have been sung during Durie's progress to the church of St. Giles's, in Edinburgh, on his return from exile. "As he is coming from Leith to Edinburgh," says Calderwood, "there met him, at the Gallon Green, two hundred men of the inhabitants. Their numbers still increased till he came within the Netherton. There they began to sing the 124th Psalm, 'Now Israel may say,' etc., and sang in four parts, known to most of the people. They came up the street till they came to the great kirk, singing this all the way, to the number of two thousand." This was truly a glorious specimen of psalm-singing!

And now we must add a few words on the Lutheran chorabuch. Luther's hymns were printed at first

with the music on single sheets, one or two perhaps upon a sheet, and distributed among the people. Many surreptitious copies of these were circulated. This produced, in 1543, a characteristic protest from the great reformer, as follows, on the title-page of an edition of his hymn-book, thus translated by the Rev. Mr. Allon:—

"Many false masters now hymns make,
Learn to judge right, and good care take;
Where God builds with his word and his church,
There comes the devil to cheat and to lurch."

"When Luther took up the cause of the Reformation, and had to remodel the services of the church, he believed he could not better enhance their beauty than by appealing to his nation's love for song, and fostering the practice of congregational singing. With this view he made translations from the Latin hymns previously in use in the church, paraphrased several of the psalms and canticles of Holy Scripture, himself wrote many new hymns, and requested his friends to contribute others." As to music, he availed himself in many cases of tunes already existing in the church, which he sparingly modified to suit his new metres; of other tunes the origin is unknown, and others are derived from secular sources.

In this latter respect Luther may be cited as an example for the use of tunes not originally composed for the church. He cared little for the source of his music so long as it was fitted for his purpose, and the tunes known to the people he considered the best calculated to attract them to his service.

The first edition of his enlarged hymn-book was edited by George Rhaw, Joh. Walther, and Bapst, in Leipsic. To these musicians, including Ludwig Senfl, we are indebted for many of the Lutheran melodies retained in the church, and found in our own hymnals of the present day.

Germany soon became filled with sacred song, and within a century and a half of the Reformation two thousand chorales are known to have been composed. Many of these fine tunes are now happily becoming popular in England.

It is an interesting fact, mentioned by the editors of "The Chorale Book for England," that, in the middle of the sixteenth century, "Lutheran hymn-books were introduced into Scandinavia, where, especially in Sweden, the hymns and tunes of Germany, with numerous additions of home growth, have remained up to the present time the stock of the national hymn-book. Courland, Livonia, and Finland also received these sacred strains into their service, and still retain them; and it should be mentioned here that a Lutheran hymn-book was printed and published in the Icelandic language at Skalbolt, in Iceland, in the year 1594, of which a sixth edition appeared in 1691."

The fountain source for German hymn-melody is Luther's "Geystliche Lieder," which contains many beautiful specimens, many composed by the great reformer himself, others taken from various sources. Winterfeld has collected thirty-six, five derived from the old Latin, seven from older German sources, sacred and secular, and the rest, so far as can be ascertained, for the first time published in connection with Luther's hymns. Of these about twenty are affirmed to be Luther's own composition; three are certainly borrowed from secular songs, and are older than Luther's time.

Among the popular chorales known to be Luther's composition are the celebrated "Ein feste Burg"—



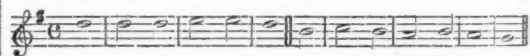
composed, according to the testimony of several of Luther's contemporaries, in 1530, in the Castle of Coburg, during the period of the Diet of Augsburg, and "Es ist gewisslich un der zeit," the fine melody known as Luther's Hymn—



No two musicians have been more alive to the beauties of the old chorales than Bach and Mendelssohn, and they have introduced them into their sacred works, no doubt thus intending to excite the sympathy of the congregation by means of their old familiar tunes. Bach also harmonised many of these chorales, and published them in a separate collection, a work well known under the title of "Joh. Seb. Bach's Vierstimmige Choral-gesang."

An impression generally prevails that Bach was the composer of these tunes, an erroneous belief that ought to be dispelled. Bach composed a few original tunes which are included in his collection, but do not number half-a-dozen.

Mendelssohn's chorales are derived from the same prolific sources. For instance, those introduced in the oratorio of "St. Paul": "Sleepers wake" is from Nicolai's "Freudenspiegel," 1599; "To Thee, O Lord, I yield my spirit," was composed by Ch. Neumark in 1687; and "To God on High" is by Hans Kugelman in 1540. The fine melody beginning thus,—



introduced into the "Lobgesang," and well known in all modern hymn-tune books, was composed by Joh. Cruger in 1563. It is sung in all the Protestant countries of Europe.

HOW WE CAME DOWN FROM THE HILLS.

ABOUT the end of October there is generally a great rush from the Himalayas to the plains, and the demand for coolies and bearers at such a time is often considerably in excess of the available supply, hence difficulties in the transport both of baggage and passengers are of frequent occurrence.

We had been spending a few months of the hot weather of 186— in the hills, and at the commencement of the cold season were very anxious to return to our home and work in the plains. It is not always a husband can get leave to fetch his wife and children home, much less to spend a long time with them at a sanitarium; so that it generally happens that one paterfamilias will undertake to bring home not only his own wife and family, but also the belongings of his friends and acquaintances too. Persons who have

never been in India can form no idea of the manifold ways in which English people work together there; even those who are comparatively strangers to one another will do all they can to render mutual assistance in time of need. I have known good ladies again and again perform all the work of trained nurses, and watch by turns all night long at the bedside of some sick child, the mother of whom may have been hardly known to them at all; the husbands may have belonged to the same regiment, been members of the same service, or cantoned at the same station, some such slight link as this would be enough to bind them together and evoke sympathy for each other. Should you be fortunate enough to be in the hills on leave, and about to return to the plains, you would only be too glad to be able to lend a helping hand to the unprotected wife and bairns of your less privileged brother officer; you would only be too glad to have an opportunity offered you of doing a kind and Christian act. I was performing such a friendly office once, when the adventure happened which I am now about to relate.

Our party consisted of myself, my wife, a little boy five weeks old, and a trusty old ayah (native nurse), and under our charge was a Mrs. S., of the civil service, her two young children and native nurse. We travelled from Almorah to the foot of the hills without any trouble beyond the usual noise and turmoil of bearers and servants inseparable from a move in India. Having reached the dāk bungalow (Khatgodoun) at the foot of the hills, we rested for awhile, and here exchanged our janpans and ponies and coolies for cahars and doolies and banghy wallahs, and thus prepared to commence our journey through the plains. Our plan was to start about four o'clock in the afternoon in the following order: my wife, little boy, and nurse were to go first, and I, with Mrs. S. and her little ones, were to follow after a short interval.

We were pretty well acquainted with the road; the first stage we knew was the worst. It was through the dreaded terai, or thick forest which runs close up the hills. It is not without tigers or wild elephants, but we feared more the defection of our bearers than the risk of an attack from a man-eater or wild elephant, a circumstance which did, however, happen to a judge not long after, who, discharging his revolver in the dark, unfortunately shot dead the English nurse who was in his charge. When starting off our first division, we noticed a considerable hubbub going on among our bearers; and although we had nearly our full complement, there was evidently some dissatisfaction amongst them, so that we began to fear, as had happened to others previously, our dāk had not been properly laid. A man is sent on a day before to have the relays of bearers arranged at the chokes (stages), and sometimes when there is a great demand for bearers, he does his work imperfectly and hastily, and thus the dāk breaks down. However, the talk subsiding, the men went off with their precious freight. The plains bearers generally run for about seven or eight miles, and there find waiting for them at the end of their stage a relay of bearers to take on the passengers. When the first stage with my wife and child was accomplished, the fresh bearers refused to go on. She, however, having no desire at night-fall to be left in the jungle, remonstrated with them, but to no purpose. She then quietly got out of her dooly, an unusual thing for a lady to do, and threatening the bearers with divers penalties, and reminding them that a Sahib was

coming on behind who would be very angry with them, at last prevailed on them to resume their journey. In due time I and the friends under my care followed the first division, and some time after midnight we all arrived at Beharee, the half-way dāk bungalow, having travelled at the rate of between three and four miles an hour, including stoppages which could not be avoided.

The next day we were ready for a fresh start, and not for a moment apprehending any more difficulties, I joined my wife and child's party, leaving Mrs. S., her servant, and child, to follow after—a step I very soon regretted, and for which to this day I have never forgiven myself. We had not proceeded very far before our bearers became most troublesome, proceeding very slowly and grumbling all the way. At every stage they became fewer; and we knew well enough that if this was our case, who had started first, and so had the first choice of bearers, the difficulties of our friend behind would be far more severe. On her account we felt most anxious, but knew not how to help her, as our bearers would not be induced to go back, and we could not wait for her on the road. While perplexed what to do, we happened to see just off the road in a tope of trees some large tents, and hard by one or two chuprasses (native servants) on duty. Of course we knew at once some person of importance was near. We stopped our doolies, and, calling a chuprasse to us, asked whose camp it was. "The Commissioner Sahib's," he replied. This was good news to us, for although I did not then personally know him (as I did afterwards), I knew well enough that an English officer would do all in his power to help a lady in trouble on her journey. Accordingly I wrote a note in pencil, telling the commissioner that Mrs. S. (whose name he would well know) was travelling on the road, and that probably as we had met with great trouble with our bearers, she would be no better off, and glad of any help he could give her. The sequel will show how fortunate it was I adopted this measure.

Having delivered my note to the peon with strict injunctions to take it instantly to his master, we proceeded on our way. The bearers began to talk all together more than ever; and, as I well remembered afterwards, not thinking of it much at the time, they appeared to be moving their shoes out of the rope-work of the dooly, where they fix them, as they always run barefooted; and why they were doing this I could not imagine. Then they began to quicken their pace, and, to our joy, seemed to fly over the ground, till all at once, and evidently with one consent, they came to a sudden stop, hastily dropped the doolies on the ground, and making off as fast as their legs could carry them across the fields, left us desolate and alone on the road side. In vain did I halloo to them to come back. But whatever I did it was all to no purpose; they were soon scattered far and wide, and the relay was not present to take their places. They probably knew this would be the case, and, to avoid being impressed or coaxed to do a double stage, determined to decamp.

The afternoon was far advanced, and our prospect was by no means cheerful. We were fourteen miles from Bareilly, where our friends were expecting us to spend the night, with apparently no chance of ever reaching it that day. The situation was novel, and so ridiculous, indeed, that our first act was to laugh, but we had quickly to consider what was best to be done. In almost every village there is a func-

tionary called a chowkedar, or watchman, who is sometimes said to be appointed to the post on the maxim of setting a thief to catch a thief; to him we had recourse, who told us, as we expected, that not a bearer was to be had; he could, however, find us a man to go on foot with a note to our friend the chaplain of Bareilly, to whom we sent a letter, describing our forlorn condition, and asking him to send out a carriage to fetch us. Having done this, we proceeded to inspect the village to while away some of the time; and here we made a happy discovery: there was one old man who possessed a one-bullock ekka (cart), to whom we tendered tempting offers of rupees, if he would take us on our way to Bareilly. He, after the usual amount of haggling, consented, and we transferred some of our bedding from the doolies, and as much of our luggage as we could, to the ekka, and having mounted this extraordinary groaning, croaking, two-wheeled vehicle, proceeded on our journey, hoping to meet the carriage we knew our friend would send for us *when* he heard of our distress. Here, however, we reckoned without our host; we met no carriage, but accomplished every inch of the way in our novel conveyance, and right glad were we when we knew that our journey was near its end. Our friend had been waiting dinner for us, and had, just as we arrived in our ekka, received our sluggish messenger's note, informing him of our forlorn situation: we were received with every kindness, and thankful to be once more under a friendly roof.

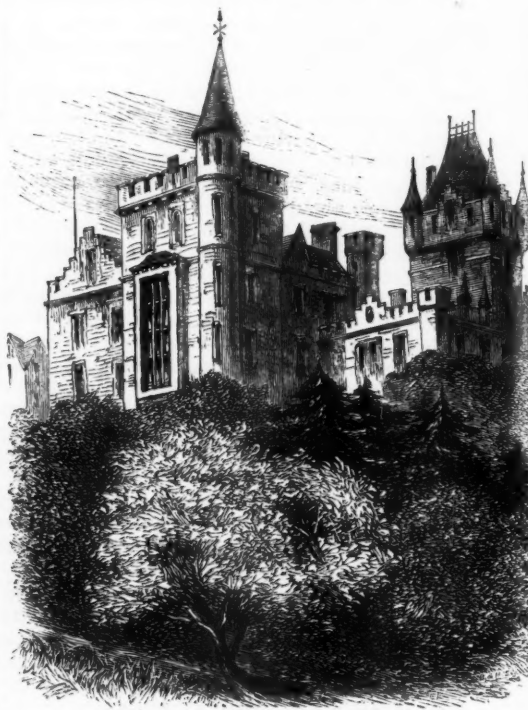
Our only anxiety now was as to the fate of our friend, Mrs. S., who had been following in our wake. As soon as the commissioner received my note he despatched two Suwars (mounted policemen) in search of Mrs. S.; and in a most sorry plight they found her. Her bearers had deserted her at an earlier stage than ours had left us; in her trouble she went to a roadside village, and having a good knowledge of the language, she explained to the natives that her husband was a sub-magistrate in the district; that he would one day be a chief magistrate (collector), and probably visit that village, and that if they did not furnish her with bearers, the consequences would be fearful to them. They being alarmed, forthwith provided her with three or four men to carry her children, but no more could she get from them. Accustomed at all times to make the best of troubles, and having a spirit far beyond her physical strength, she set off to *walk* towards Bareilly, she and the Ayahs following the dooly. They had not proceeded far before they met a villager travelling with a tatoo (small native pony, which may be bought for about fourteen shillings); on him they laid hands, and persuaded him to turn his pony's head the other way, which, being done, the lady mounted the steed, and continued her journey at a foot's pace. Presently she saw two mounted men coming along the road, and the reader may guess her joy when they reined in their horses as they approached her, and told her they were come to look after her, sent by the Commissioner Sahib, who was a few miles off. Then they galloped back to the camp, told their master that they had found the Mem Sahib on the road, deserted by bearers, and riding a common tatoo. He could hardly believe this at first, but on the men assuring him such was the case, he ordered his carriage, and drove out to meet her; and thus brought the lady and her little ones safe to his tents,

where they received every kindness, and were afterwards sent on to their friends at Bareilly, where they arrived in the evening, somewhat late, but none the worse for their adventures.

E. T.

YORKSHIRE ABBEYS.

BY MRS. MACQUOD, AUTHOR OF "THROUGH NORMANDY," ETC.



NORTH END OF BEN RHYDDING.

IV.—BOLTON ABBEY AND BEN RHYDDING.

WE reached Ben Rhydding station on a bright, warm August morning, and were delighted with the first view of the dark-grey castle-like building towering above the steep wooded road that leads up to it. The grand-looking mansion is about five hundred feet above the Wharfe; Rombald's Moor, up to which the charming pleasure-grounds slope, reaching nearly five hundred feet higher still. Close to the station we saw the quaint old farmhouse with stone-mullioned windows, once Wheatley Hall, where Cromwell slept before the battle of Marston Moor. Our pleasant rooms looked west, and we had, on reaching them, a splendid view of Wharfedale, the white houses of Ilkley, about two miles away, glittering in the sunshine. On the left, high above us, is a line of black jagged rocks, one of which rises boldly from the rest like a ruined border fortress. This is the famous "Cow," and below it, perched on the steep moorside as if it had suddenly checked itself in rapid descent, is a square black mass called "the Calf." Beyond the Cow a long range of lofty rock-strewn

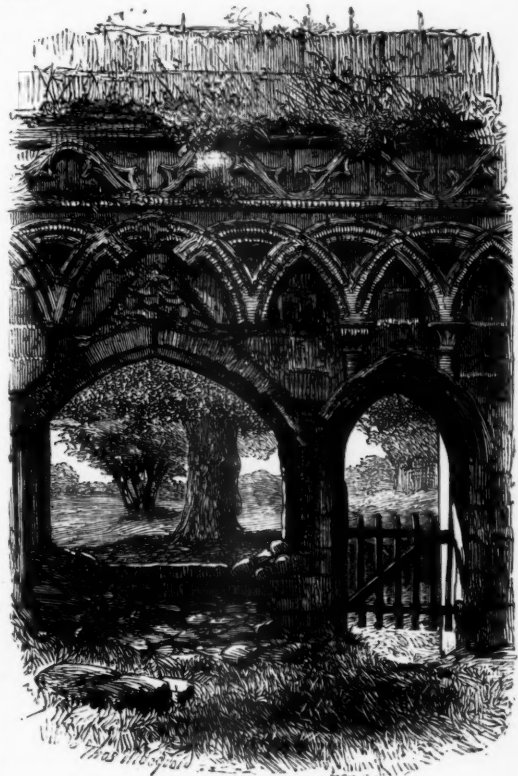
moor circles round till it crosses the valley on the right, and joins a succession of grand hills stretching away as far as eye can reach, Beamsley Beacon towering above the rest. Just beneath us are the inviting pleasure-grounds, well-kept sloping lawns, with flower-beds and shady trees, of Ben Rhydding.

We were summoned by the dinner-bell to leave off our delighted gazing, and going down into the great, well-proportioned dining-hall, found about 130 people seated at dinner. A lively buzz of talk prevailed, and we noticed that water seemed by no means the universal beverage of the visitors.

Dinner over, we strolled about the grounds, first watching an eagerly-contested game of lawn tennis near the cricket-ground, and then looked in at the great racket-court and skating-rink, before going to the drinking well. This is sheltered under a stone summer-house, called "The Shrine." The water of this fountain is deliciously cool and invigorating, and is said to be beneficial in cases of gout. Up one of the winding paths, we came to a gate leading on to rising ground, planted like a park. Here, at the foot of a steeply-rising moor, in a grove of trees, is a small lake. This part of the grounds is lovely. It has been left wild, and in a sort of thicket of holly and thorn trees on the right rises a green mound called Arthur's Seat. We got some charming glimpses of Rombald's Moor and the Cow and Calf rocks, rising up like the rounded towers of an old castle between the trees. From the mound one gets, it is said, a view of one hundred square miles, and the view of Ben Rhydding, perched above the valley, and girdled in with trees, is very imposing. Across the valley is the lofty chain of hills topped by Beamsley Beacon.

All around, in the uncultivated parts of the ground, and indeed everywhere on the moor, large bluebells grow in abundance, and show exquisitely among tall flowering grasses starred with golden hawk-weed; here and there we came on lovely little dells where

foxgloves bend graceful heads as if ringing fairy bells.



PART OF CHOIR, BOLTON ABBEY.

From the mound, by a gate in the low stone wall,



BARDEN TOWER, NEAR BOLTON.

the boundary of the grounds, we reach a yellow, deeply-ridged cart road, cut on the side of the hill above Ben Rhydding, and skirting the moor which rises from it steeply on the left, its rugged side broken by bushes of furze and tufts of heather. Below this is another parallel road bordered on the right by a grassed dry ditch, its green monotony broken by tufts of whitening bent and brown furze; behind the ditch a hedge of hazel bushes is varied with gnarled stumps of elm with fresh green heads, reminding one of old men in flaxen wigs; and behind the hedge green meadows slope down steeply to the road beside the river.

A few steps farther, and the Cow and Calf loom in dark ruggedness from the top of the moor. In front the yellow road mounts rapidly, and sweeps round the edge of the waste, cutting sharply against the pale blue sky. A little to the right, filling the gap the road makes as it sweeps round to the left, is a lovely peep of the opposite side of the valley. A few rich green trees on the slope stand out in bold relief from the exquisite picture formed by the hills. Cloud shadows lie purple here and there across the meadows, while a bright, intense gleam singles out a white house here and there in the distance, a soft grey mist over the unseen town below showing that it is tea-time at Ilkley.

It is a very pleasant and not a fatiguing climb to the top of the Cow, the highest of the two great black rocks that overhang Ben Rhydding. The path winds in and out among the blocks of grit like some huge, uneven staircase. We were surprised when we reached the top to see the immense masses of stone around us, and the view from the top of the Cow is very fine. At our feet, on the left, is Ilkley, a sleeping town, for only tiny wreaths of smoke mist the landscape. A long range of dark trees marks the course of the river. Above this are green fields divided by hedges and dotted with brown cows, and higher still stretches a wild range of moor, ended on the left by Beamsley Beacon. A still more distant range of hills reaches to Barden Fell, and one knows that in the valley between lie Bolton Abbey and the Strid. Eastward the view is said to reach as far as the York wolds.

Looking in the opposite direction from the river we saw that we had not reached the highest point of the moor, another range of hills rising from the broad valley of moor below us, and beyond it another higher still. The air on these moors is wonderfully pure, and so exhilarating that one requires to become acclimated to reap due benefit from it, for Ben Rhydding works marvels in restoring overtaxed strength and mental power. The former proprietor, Dr. Macleod, to whose talents and enterprise it owes its reputation, died about two years ago, and it is now in the hands of a company. There is a skilful resident physician. There are, of course, many invalids among the visitors, and even those who cannot walk beyond the grounds seem to find great refreshment and enjoyment in gazing on the lovely landscape of barren moor and lofty hills and cloud-shadowed valley and tree-bordered river, and hoping that one day they will get there.

Sunset is seen to perfection from under a spreading ash-tree. We watched one clear evening till the sun set beyond the hills. A broad, grey mist rose slowly and enveloped the valley. The little village of Ilkley was blotted out; so was the form of the surrounding hills; from the farthest ridge of Rombald's Moor to

the crest of Beamsley Beacon clouds and hilltops mingled in a sea of brilliant red which grew more and more intense till it dazzled one's eyes; then the red melted into soft pale green, across which long leaden cloud-lines stretched as if trying to bridge the valley.

Haworth Parsonage is within a drive, and the famous masses of gritstone, called Brimham Rocks, though at some distance, are within reach. They are a series of rocks of the quaintest forms, piled one on another, and extending over a space of sixty acres. From the top of the great Rocking-stone the view is wonderfully extensive and varied. Harrogate and Knaresborough are also to be reached by railway. Then there is a charming drive to picturesque Skipton, also to Gordale Scar and Malham Cove; and beyond Skipton, by taking train to Settle, even the lofty hill of Ingleborough, or Inglebery, can be reached. This is a wonderful district, full of monstrous caverns. The great cave of Ingleborough, called Clapham Cave, has been explored upwards of a hundred yards, and doubtless goes much farther. Ingleborough itself is 2,361 feet high, and is best mounted from the side of Ingleton, about ten miles north-west of Settle.

Ilkley to the west and Burley to the east are the nearest villages to the Establishment of Ben Rhydding. There are several hydropathic houses at Ilkley, of which Ilkley Wells is the chief. The view over the valley must have been still more lovely before the crop of modern villas sprung up. Twenty years ago Ilkley was a gathering of thatched cottages, one of which still remains in the principal street.

Otley, too, beyond Burley, is a quaint old town, mentioned in "Domesday Book" as Othelai. Burley is a more modern village, but contains an interesting old house, Burley Hall, once belonging to the Fairfaxes. Denton Park, which belonged to the Fairfax of Cromwell's time, is nearly opposite Ben Rhydding; it now belongs to the Wyvill family; but the house, though modern, is said to be haunted. Leeds and Kirkstall and the famous old church of Adel are easily reached by railway. Within an easy walk from Ben Rhydding is the hill called the Cairn, about 1,000 feet high. On the way there, over the moor, we came suddenly to the opening of a valley—through which a little stream rushed along half hidden by huge grey blocks of grit, covered with rich tufts of heather and cloudberry, mingled with fast-dying bracken. Here and there the earth breaks away and shows a rich yellow, with tufts of white bent and dark heather between. Above us the jutting crags look like some moorland castle against the louring, angry sky. We crossed this hidden stream, which makes a cascade lower down, and climbing up the moor, we presently found ourselves on the edge of a deep ravine, its dark gritstone sides clothed with brown and purple and tufts of green moss, and showing at the end, far below, a peep of the village of Ilkley. We had walked to Ilkley along the moorland road, and had never suspected the existence of this precipitous glen. Leaving it on the right, and climbing up the broad moor, we came to a wild bare region, a sort of lofty table-land of desolation, and here was the Cairn, a pile of loose stones. The dark leaden sky, and a storm-wind that was beginning to rise, were quite in harmony with this weird scene, where the eye rested on nothing but moor, one broad hill rising beyond another and forming the immense horizon. As we

approached the Cairn, a huge bird rose slowly, and flapping his wings, soared over the moor. From the Cairn, keeping to the right, we gained the ridge of the ravine. It was much higher here, and the view is very grand, but we found the descent rather perpendicular. The moss and cloudberry bushes clinging to the stone make it safe to descend into the valley below, and it is worth attempting this for the sake of the fine view when halfway down; besides which, the return through the valley is very picturesque.

Another evening we went in search of the waterfall, the sound of which had reached us on our way to the Cairn. Passing through the gate by the upper lodge, we kept along the broad yellow road till it began to descend towards Ilkley. We left it then, and climbed up the moor on our left till we reached the little mountain stream almost hidden by blocks of gritstone. On our way across the heather we saw plenty of pale-green tufts of the scented fern, *Lastrea Oreopteris*, nestling among the rushes. As we followed the course of the little gurgling stream the rocky banks grew steep, and we lost all trace of a path. Sometimes we climbed on one side, sometimes on the other, among huge blocks of stone and slippery clay, till at last we came in sight of our quest, the sound of which had guided us onward. The stream showed more plainly here in clear brown pools, closed at each end by walls of grey and moss-grown rock, gemmed with tufts of heather and the exquisite green of blechnum fern. The red-brown rocks on each side were almost perpendicular, and rose to considerable height, their sides rent with dark fissures, the bright green of the bell-heather above overhanging like a thatch. At the end the rocks met and formed a lofty wall, down which the stream came tumbling in a double cascade some feet apart. Turning round, we saw a lovely picture. The valley curved in and out, following the course of the stream, till it was ended by a horizon of lofty hills, one rising behind another. Close beside us a slender ashling sprang out of the rock, the berries already tinged with red, while a fringe of brown-tufted rushes bordered the stony stream.

There is another and longer walk to the Hunting Tower; and there are many other delightful rambles, especially one to Fairy Dell, and also a great variety of longer excursions. Perhaps the best is to Bolton Priory and its surroundings, for although Bolton is less interesting as a ruin than either Fountains or Rievaulx, it is supreme among the Yorkshire abbeys for the beauty of its position and picturesque effect. Its old grey walls stand beside an exquisite curve of the "strong Wharfe," in a deep valley shaded by lovely woods; these open now and then to visions of distant blue hills. At the bend of the river are the well-known "Stepping Stones," and from here the view of the ivy-wreathed abbey is perfect, while the river-curve itself has a bold background of red-brown scaur, down which a cascade leaps merrily.

The drive to Bolton from Ben Rhydding is very delightful. Ilkley Bridge is in itself a picture; high above rise the hills breaking into jagged peaks, their sides richly wooded or brown with furze and bracken. We do not cross the bridge to-day, and as we go on the road becomes more and more beautiful. We pass Hollin Hall, supposed to have been the birthplace of Bishop Heber. At last we stop at an opening in the trees. In front, far below us, is the

river and Bolton Bridge, and behind this the grey ruins, nestling among the trees. On the right the Valley of Desolation and Bolton Woods.

We drove on till we reached the Priory, and then stopped again to admire its position. It cannot compare with Fountains, either in size or magnificence but the valley of the Skell dwindles into insignificance beside the mighty Wharfe, which flows in deep seclusion from the rocky glens near Barden Tower through the exquisite woods to the boiling, roaring Strid, and then broadens again till it sweeps in a powerful curve past the grey old walls of the Priory.

The drive on to the Strid was charming, and every now and then we got peeps into Bolton Woods of rock-cumbered river and tender green trees and romantic glens that made us long to spend days in exploring so lovely a region. The colour on the rocks, and on some of the moss-grown trunks in the glen, is indescribable, especially when the sun comes glinting down through the chinks between the leaves overhead.

Day after day may be spent in Bolton Woods following the curves of the lonely river, or in rambling on to the Valley of Desolation, Posforth Gill, or Barden Tower, enjoying the exquisite picture of the old manor-house, set in its frame of trees, with a foreground that would be difficult to paint.

As we go on to the Strid the valley narrows, and dark mysterious woods overhang the stone-cumbered stream. At one point a brook bursts suddenly from one of the side glens and rushes into the river. We drive on till we come to a sort of clearing, but for some time before we reach it we hear a hoarse roar gradually increasing, and now, as we leave the carriage and follow the track leading to the Strid, the noise becomes tremendous. The tree branches cross and recross so as to veil the sight of the torrent but suddenly we emerge on a platform of large blocks of moss-covered stone, on which the fury of the water has scooped basins, and there is the river rushing wildly between like some huge wild beast, with yellow mane and foaming mouth, in search of human life, which it is said has been too often sacrificed to its fury. A hoarse yellow torrent, the dark wood rising on each side over the rocks, while moss-covered tree-roots stretch out among patches of tawny sand. The river here is contracted within a trench in the rocks for about sixty yards; as it enters this passage it falls about a height of ten feet, and then rushes madly on in yellow foaming fury to the Strid, where the distance across is said to be only four feet six, seemingly an easy jump, but, from the peculiar position of the slippery rocks, and, above all, the roaring thunder of the torrent, a very dangerous one for even strong-nerved men. Only the other day a man swerved in trying the leap, and fell into the boiling torrent. His body was not found for several hours. This is the place which Wordsworth has commemorated in his poem, "The Force of Prayer."

"What is good for a bootless bene?"

With these dark words begins my tale;
And their meaning is, "Whence can comfort spring,
When prayer is of no avail?"

Young Romilly through Barden Woods

Is ranging high and low,
And holds a greyhound in a leash,
To let slip upon buck or doe.

And the pair have reach'd that fearful chasm,
How tempting to bestride !
For lordly Wharfe is there pent in
With rocks on either side.

This striding-place is called "The Strid,"
A name which it took of yore :
A thousand years hath it borne that name,
And shall a thousand more.

And hither hath young Romilly come,
And what may now forbid
That he, perhaps for the hundredth time,
Shall bound across "The Strid" ?

He sprang in glee—for what cared he
That the river was strong, and the rocks were steep !
But the greyhound in the leash hung back,
And checked him in his leap.

The boy is in the arms of Wharfe,
And strangled by a merciless force ;
For never more was young Romilly seen
Till he rose a lifeless corse.

Long, long in darkness did she* sit,
And her first words were "Let there be
In Bolton, on the field of Wharfe,
A stately priory !"

The stately priory was reared,
And Wharfe, as he moved along,
To matins joined a mournful voice,
Nor failed at evensong.

And the lady prayed in heaviness
That looked not for relief,
And slowly did her succour come
And a patience to her grief.

Oh ! there is never sorrow of heart
That shall lack a timely end,
If but to God we turn and ask
Of Him to be our friend !

This legend has been disputed, as the signature of William de Romillé, only son of the Lady Alice, appears in the charter by which the monks of Embsay (a foundation near Skipton, instituted by the father and mother of Alice, William de Meschines and Cecilia de Romillé) were translated to the manor of Bolton, "on the field of Wharfe."

Rombald's Moor, near Ben Rhydding, is said to take its name from the Romillys.

Beyond the Strid the river flows down towards the abbey as smoothly and calmly as if no such torrent had troubled its waters.

* His mother, Alice or Adeliza de Romillé, the foundress of Bolton Abbey.

FERTILISERS AND FOOD PRODUCERS.

I.—PHOSPHATES.

WITH a population increasing very rapidly, and, owing to the increase of towns and the extension of railways, a less available breadth of land for the production of food, it becomes one of the pressing questions of the day, How may our supply of food in these islands keep pace with the increase of our family ?

In two principal ways have we striven to answer this question; first, by inviting to our shores the surplus food of other countries; and, secondly, by the application of the principles of agricultural chemistry to the cultivation of the land at home. Considerable success has attended the efforts which have been made in each of these directions. Thus in the former way, the cattle that feed on the vast plains of north-eastern Europe, and more lately those of the great American continent, furnish us with beef; the wide-stretching valleys and plains of North America give us corn; the waters of the Mediterranean and those of the North-American bays and rivers yield us fish, and so I might go on with the enumeration, for the catalogue of the sources of our meat supply is a long one.

In the second direction, science has discovered many fertilisers of the soil besides that of the old farm-yard manure and the waste of the life of towns, fertilisers which contain, in a concentrated form, the essential elements that constitute the life and growth of food-yielding plants.

I propose, in a few brief papers, to describe the character of these fertilisers and the sources whence they are derived. I begin with those whose name

stands at the head of this paper, and which are commonly known as phosphates.

Ohne phosphor kein gedanke ("Without phosphorus no thought") is a German saying which sounds very materialistic, it is true, but one which nevertheless contains an element of truth. Phosphorus, in one form or other, enters very largely into the composition of the human frame. Bones, brain, and nerves, with the healthful condition of them all, depend upon the constant and sufficient supply of this element of life. Our bones are largely made up of phosphate of lime, and if we reflect for a moment upon the prodigious quantity of bony matter which is formed every year in a dense and ever-growing population, and if we think still further that all this bony matter is, in one form or another, derived from the soil—that ever man is being formed "out of the dust of the ground"—it becomes evident that if we wish to avoid the utter exhaustion of the land, the amount abstracted from it must, by some means or other, be replaced. The force of this statement will further appear from the ascertained fact, that phosphoric acid constitutes nearly one-half of the substance of the ash of wheat, and more than one-third of those of barley and oats. It is essential to the growth of the turnips on which the bulk of our oxen are fed in winter, and the grasses which form the staple of their summer food derive their richness for milking purposes and their feeding properties from its presence in the soil.

Phosphorus does not occur in nature in a pure state. It is found, combined with other substances,

chiefly with lime, potash, and soda. Its combinations with these substances are termed "phosphates," as phosphate of lime. In this combination it is chiefly used in the manufacture of chemical manures. For this purpose it is mined and excavated in various countries in large quantities, it happily being a substance largely diffused in the strata which form the successive layers of the earth's crust. I will describe the mode of its occurrence in these various geological formations.

The Laurentian rocks of Canada are among the oldest known rocks. They consequently lie at the base of all the other rocks; I will, therefore, begin with these, and ascend towards the most recent deposits.

Phosphate of lime, in a very pure form, is largely disseminated throughout the vast series of the Laurentian strata, as these are developed in Canada. To a considerable extent it is found in beds which lie interstratified between those beds of limestone in which is found that oldest and earliest of all known fossil organisms, the *Eozoon Canadense*.

The beds are of a dark colour, being largely charged with graphite—the remains of the vegetation of the early sea in which they were deposited. Besides these regularly stratified beds, there are also irregularly-branching veins traversing the strata, which contain masses of this mineral in a very pure form. The phosphate in these veins is mostly green in colour, and it often assumes a beautifully crystalline form, some of the crystals, which are five-sided columns, being of a large size. The origin of the phosphatic beds is believed to have been partly due to re-deposited phosphate of lime which had passed through, and formed part of the substance of organic beings. The phosphate in the veins is supposed to have been deposited, pure and simple, by the infiltration through the cracks and fissures in the rock of water which had become largely charged with the mineral. These deposits are being worked to an increasing extent by English and American firms, and they form the source of the supply of the purest kinds, the quality ranging from 70 to 90 per cent. of phosphate of lime.

The Cambrian strata, whose place is above the Laurentian, have in them in Canada layers of black phosphatic nodules and shells of crustaceans, which yield from thirty to sixty per cent. of phosphate of lime. In rocks of the same age, near St. David's, in South Wales, the shells of large crustaceans have been found to contain twenty per cent. of the mineral, but sufficient quantities have not yet been found in this great group of strata for commercial purposes.

We now ascend to the overlying group of Lower Silurian strata, near the summit of which there is, in North Wales, a band of limestone known as the Bala Limestone. Resting upon this limestone, and everywhere occupying the same position, is a bed of phosphate of lime, which ranges from ten to eighteen inches in thickness. It is of a black colour, from the graphite it contains. It is nodular in structure, possibly from a dull form of crystallisation which took place before the bed was consolidated. Sometimes the nodules preserve an organic form, and show traces of organic structure. In the shale that overlies the bed there are numerous remains of creatures of the crab and lobster kind—ancient crustaceans. There are also shells whose structure was horny and phosphatic. These have not been subjected to the chemical changes which the nodules in the bed itself

have undergone, and so, while they are all more or less phosphatised, their original organic structure has been preserved. It is inferred, therefore, that in this bed the phosphate was not deposited pure and simple, from the water, but that it first of all, or at least a good portion of it, entered into the structure of sea organisms, and then with the death of these it was deposited and gradually accumulated as a wide-spread bed on the floor of a comparatively shallow sea. The average quality of the bed is about forty-five per cent. This is a low percentage, and it renders a very economic working of the deposit necessary. There are, without exaggeration, millions of tons of the mineral in North Wales, but the commercial success of the working of the deposits depends upon the introduction of railways into the heart of that country.

Above the Lower Silurian come the Upper Silurian strata, and at the top of this group is a highly phosphatic bed, which is known among geologists as the bone bed. This bed, which immediately underlies the lowest beds of the Devonian, or Old Red Sandstone, group, is very interesting, inasmuch as in it are found for the first time the remains of vertebrate fishes. The bones of these are associated with the remains of various crustacea, like those of the bed I have just described. As yet this bed has not been found of a sufficient thickness to make it commercially valuable.

A somewhat similar bed is found at the summit of the Old Red Sandstone, just at its junction with the overlying Carboniferous Limestone. Another one is found at the summit of the Trias, or New Red Sandstone, between it and the Liassic group of strata. In this last bed there are, in addition to fish and crustacean remains, numerous bones, and the exuviae of the huge reptiles which had there appeared in the order and succession of life.

There are two bone beds still higher, one at the junction of the Lias with the overlying Oolite, and one at the base of the Lower Greensand, at the summit of the Wealden. None of these various "bone beds" have as yet been found of sufficient thickness or continuity to pay for working, but I mention them here as interesting from their position at the junction of several consecutive groups of strata, and also as forming a source from whence may have been derived, by disintegration and denudation, some of the rolled and rounded nodules, usually known as coprolites, which are found in the looser material of the overlying formation.

Between the clays and limestones of the Oolite—the highest formation we have as yet reached—are found the phosphates which come from the south of France, and which are much valued in the manufacture of chemical manures.

Between the summit of the Oolitic strata and the base of the massive beds of the Chalk, there is interposed a series of beds of sand and clay, which are known as Greensand. These beds are subdivided into Lower Greensand, Gault, and Upper Greensand. In the counties of Bedford and Cambridge each of these subdivisions contains a bed of phosphatic nodules, which has all the appearance of a drift bed, the materials of which, consisting, as they do, of sand, pebbles, ironstones, and phosphatic concretions and nodules, seem to have been washed out of the clays of older formations. In them phosphatic fragments also occur, as the fossil remains of shells and crustaceans, sometimes as encrusting these, and some-

times as the vertebræ and other bones of extinct animals. The lowest of these beds has been largely worked about Sandy, in Bedfordshire, and the uppermost in the vicinity of Cambridge and Ely. Occasionally the middle bed is worked with one of the others. The quality ranges from fifty to fifty-five per cent. Deposits of this age are also worked in the north-west of France, and phosphatic nodules and fragments occupy the same horizon on the south coast of England, and they extend through the counties of Dorset, Wilts, and Somerset, but as yet they have not been found in sufficient quantities in those counties to be usually worked with profit.

In cretaceous, or chalky strata, of probably a more recent date, are found the rich deposits of phosphate of lime in Estramadura, in Spain. This is a phosphate of rich quality, ranging from sixty to eighty per cent., and it is also more free from the deleterious ingredients of iron and alumina than those of English extraction, especially those to be mentioned next.

Upon the great mass of the chalk lies the London clay, in which there are numerous phosphatised remains of ancient life, and just above the London clay lies the red crag, which is largely developed in the county of Suffolk. At the junction of these two formations there is a bed of phosphatic nodules which are known in commerce as the Suffolk coprolites.

This latter name was given to them by Professor Henslow, who regarded them as the exuviae of extinct animals. Though he was only very partially correct in this idea, he was thus led to perceive their value for fertilising purposes. Many of the fossils and rolled nodules in this deposit seem to have been washed out of the underlying London clay, just as those of the Greensand beds appear to have been derived from older deposits.

Of an age possibly intermediate between the Suffolk and Bedford phosphatic deposits are the land phosphates of Carolina, large quantities of which have been shipped to this country. These contain from fifty to sixty per cent. of phosphate of lime.

Among the more recent deposits of this mineral may be reckoned those of the valley of the Lahn, in North Germany. The underlying rock over a great part of this valley and the neighbourhood is a Devonian limestone. This is covered by a considerable depth of tough clay. But before the clay was deposited on the limestone the latter had been broken up, its edges had become rounded, and hollows had been scooped on its surface. In these hollows and cracks now nestle concretionary deposits of phosphate of lime, which of late years have been much worked for use in this country and elsewhere.

Besides the above, which are the principal sources from whence the mineral is derived, there are coral reefs that encircle islands in the Caribbean Sea and elsewhere into the composition of which phosphate of lime largely enters, but which have not as yet been extensively worked.

When the mineral has been mined or quarried it is ground to a fine powder, and by the action of sulphuric acid it is made soluble. In this form it is called superphosphate, and it is ready for mixture into a variety of chemical manures, according to the nature of the plant to be grown and the soil to be cultivated.

Thus, from the fulness treasured up within itself

by its Almighty Maker, is the earth replenished. Its stones are made into bread, and the waste of the life of ages long since gone by ministers to the life of to-day.

F.G.S.

PONGO THE GORILLA.

THOSE who remember the excitement caused by M. de Chaillu's introduction of the gorilla to public notice, and the subsequent literature, descriptive and pictorial,* will have been sadly disillusioned by seeing Mr. Pongo, the Berlin specimen, "the only live gorilla that has been brought to Europe." A full-grown gorilla in the wild state may be an imposing object, but this is a poor dull-looking creature, and less in stature, as well as intelligence, than many chimpanzees, ourang-outangs, and other Simian individuals whom we have seen in former exhibitions. From Mr. Frank Buckland's account of him we give a few extracts.

I have had several interviews with Pongo, the gorilla, at the Westminster Aquarium, and at every visit I am more impressed with the interest of this remarkable animal. Hitherto gorillas have only been known by badly preserved skins, specimens in spirits, or skeletons more or less out of repair.

If I recollect right, the first evidence of the gorilla was a skull that was brought over to Professor Owen. It had been found in a native place of worship somewhere on the Gaboon, where it had been placed as a "Fetish," or deity. Professor Owen writes, "This skull bore indications of the sacred marks in broad red stripes crossed by a white stripe of some pigment that could be washed off. Their superstitious reverence of their formidable and dreaded enemy, adds to the difficulty which a stranger has to contend with in obtaining specimens."

Mr. Bartlett informs me that some years ago a gorilla was exhibited in Wombwell's menagerie. They did not, however, know it was a gorilla, but called it by some other name. Pongo, it is quite evident, is not very arboreal in his habits. He sits nearly always on the floor, with his legs tucked under him, exactly as does a tailor; in fact, Mr. Bartlett suggests that he very likely might live in a cave. His face cannot be called ugly certainly, but at the same time it cannot be called intelligent. The nose is much depressed into the face; the lips are even with the nose, and pink inside. He cannot smile, but he grins like a dog. He will snatch and pull away anything put near him. He took a pocket-handkerchief from a lady's pocket, put it round his neck, and afterwards wiped his nose with it. This, I am inclined to think, was not imitation, but an accident. He is apparently not right-handed, but uses both hands equally.

If there is any one distinctive point between man and a gorilla, it is in the conformation of the hands. The thumb is exceedingly short, and cannot be used with anything like the facility as in the human subject.

No one seems to have noticed in this specimen the great difference between the human hand and that of the gorilla, first pointed out to me by Mr. Bartlett. In the human hand the three bones form-

* See "Leisure Hour" for 1861 and 1867.

ing the finger spring direct from the palm of the hand. In the gorilla the spaces from the knuckles to the first joint of the finger are united by a membrane, and become practically a continuation of the palm of the hand. The gorilla uses his hand as a foot much more than as a hand. When he progresses the fingers are bent inward on to the first joint of the fingers, thus forming a sort of pad on which the animal walks. When walking the fore-arms and hand form, as it were, supports for the rest of the body; in fact, the gorilla's gait may be likened to a man going on crutches. The hind legs are comparatively small and much bowed outwards, like the legs of a baby. The thumb of the foot has great powers of prehension; indeed, it may be said that the thumb proper is carried on the foot.

It is to be carefully marked that the gorilla has no calf to the leg and no biceps in the fore-arm. According to my observation, he cannot stand upright without supporting himself by means of some object. I have frequently seen human beings acting the part as monkeys. It will be remarked that in this case the moment the man is able to relax his performance he stands instantly upright; the gorilla, on the contrary, instantly he possibly can do so, drops on all fours on the ground. This is entirely in accord with the definition of "Man" as contrasted with the brute given by the poet of old,—

"Os homini sublime dedit cœlumque tueri."

As the gorilla walks, it will be seen that his back is almost square, somewhat after the form of the back of a prize sow, or the flat saddle used in horsemanship at a circus. I have ascertained that this great breadth of back is given by the ribs, which are broad and very strong. In the human subject the space of about a hand's-breadth intervenes between the bottom of the ribs and the top of the pelvis or hip-bones. In the gorilla the ribs come close down on to the top of the hip-bone. The hip-bones themselves are not spread out laterally to support the weight of the body as in man, but are narrowed as in many running animals. The gorilla has apparently no more voice than a roughish guttural sound. We have not, however, yet seen him in a rage. Under these conditions it is just possible he may make a great noise. I have put my finger into his mouth, and have ascertained that he has no pouch nor anything like a pouch. He puts everything he can get hold of into his mouth, and on all occasions his mouth and teeth are used as weapons of offence and defence. In this one fact alone there is a vast difference between human beings and gorillas. When men quarrel they always use their hands, and in very exceptional instances their teeth.

Mr. Buckland enters into various details as to habits and structure, showing the contrasts between this the most highly developed of the apes, and the lowest types of humanity. It does need, however, the anatomist or naturalist to demonstrate the absurdity of Darwinism in supposing such a brute to be a near progenitor of the human race.

RHYMES ON PLACES.

FROM Govan, in Ayrshire, a correspondent sends the following examples of "Rhymes on Places" in Scotland, where this homely form of description is as common as in England.

The people of Musselburgh vaunt the antiquity of their town in the following:—

"Musselburgh was a burgh
When Edinburgh was nane;
Musselburgh 'll be a burgh
When Edinburgh's gane."

A claim which the good people of Edinburgh will not allow.

The former poverty of Bucklyvie, a village of Stirlingshire, evoked the following uncomplimentary rhyme:—

"Baron o' Bucklyvie,
May the worst luck drive ye,
An' a' tae pieces rive ye,
For building sic a toon,
Where there's neither horse-meat,
Nor man's meat,
Nor a chair tae sit doon."

The characteristics of the districts about Liddesdale, the valley of the Liddel Water, a stream well known to anglers, are noted thus:—

"Bilhope braes
For bucks and raes;
Carit haughs for swine;
Tarras for a gude bull-trout,
If it be ta'en in time."

But the days of the "bucks and raes" are past, and all that remains is the "gude bull-trout."

Another popular rhyme runs thus:—

"Glasgow for bells,
Lithgow for wells,
Fa'kirk for beans and peas."

The English reader scarcely needs to be reminded that in Glasgow, as in other Scottish cities, there are no chimes, but the air is tortured by bells of different tones jangling together. Lithgow is, of course, Linlithgow. One would have thought that Falkirk was more noted for its "Cattle Trysts."

En passant, Falkirk must have been distinguished by a singular perversity among its youth, as witness the half-rhyming proverb:—

"Like bairns o' Fa'kirk,
Ye'll end
Ere ye'll mend."

The following, I think, refers to the fertility of the district. Both places are in Perthshire:—

"Between the Camp o' Ardoch,
And the Greenan hill o' Keir,
Lie seven kings' ransoms
For seven hunder' year."

The "Camp o' Ardoch" refers to the Roman camp there, one of the most perfect in Britain.

Moray has a dolorous lament:—

"The gule, the Gordon, and the hoodie crow,
Are the three warst things that Moray ever saw."

The "gule" is a destructive corn-weed. The "Gordon" is "Lewie" Gordon, one of the leaders of the "forty-five."

The people of Gordon parish, in Berwickshire, are certainly not flattered in the following:—

"Huntly Wood, the wa's are doun,
Bassandean and Barristoun,

Heckspeth wi' the yellow hair,
Gordon gowks for ever mair."

"Gowk" is the Lowland Scotch for "fool."
Maybole, in Ayrshire, is satirised as follows:—

"Minibole's a dirty hole,
It sits aboon a mire."

Minibole is (or was) the common name for the town in the district.

Who has not heard of the Sutors of Selkirk? Over fifty years ago the cobblers so far outnumbered the other craftsmen that they possessed one whole street. Unlucky was the wight who was induced to shout in that street—

"Sutors ane, sutors twa,
Sutors in the Back Raw."

He had to betake himself to swift flight to save himself from castigation from the incensed "sutors."

The respective merits of the soils about the two principal rivers of Aberdeenshire are thus told:—

"Ae rood o' Don's worth twa o' Dee,
Unless it be for fish or tree."

"When found, make a note of." The following will no doubt be highly prized by those unbound in Hymen's bonds:—

"Baght-rig and Bilchester,
Hatchet-knowes and Darnchester,
Leetholm and the Peel:
If ye dinna get a wife
In ane o' thae places
Ye'll ne'er dae weel."

The places mentioned are in the neighbourhood of Coldstream.

The awful rhyme about the Tweed and its tributary, the Till, is well known:—

"Till said tae Tweed,
'Though ye rin wi' speed
An' I rin slaw,
For every ane ye droon
I droon twa.'"

A rhyme common among children in Scotland may give some new information to Londoners:—

"Lunnon toon's a braw, braw place,
A' covered ow'r wi' gold an' lace."

I conclude with the following, Dr. Pennycuik's description of Peebles. Although not a popular rhyme, it contains all the qualities for one, except, perhaps, brevity:—

"Peebles, the metropolis of this shire,
Six times three praises doth from me require,
Three streets, three ports, three bridges it adorn,
And three old steeples by three churches borne;
Three mills to serve the town in time of need,
On Peebles Water and the River Tweed:
Their arms are proper and point forth their meaning,
Three salmon fishes nimble counter-swimming."

It describes the Peebles of more than two centuries ago.

These quaint old rhymes, although still living, are fast disappearing as communication between different places becomes more easy and more frequent. On

the whole, it is not much to be regretted, for the majority of them served to keep awake a spirit of exclusiveness. Two villages quarrel, and the enmity, which would otherwise soon disappear, is handed down and intensified in the popular rhymes.

J. T. N.

Varieties.

ORIENTAL LANGUAGES.—The Rev. James Robertson, late of Beyrout, author of the articles in the "Leisure Hour" on "The Koran and the Bible," has been appointed Professor of Oriental Languages in the University of Glasgow.

PHOSPHATE OF LIME, OR "RED CRAG" MANURE DISCOVERED.—The present writer was acquiring his first geological experience in the field in the Suffolk Crag, at Felixstow, in the year 1843, in collecting shells, shark's teeth, and other relics, when his father and himself noticed a large quantity of brown pebbles scattered over the Crag talus which was spread over the sloping cliffs of London clay down to the beach. The late Professor, suspecting that they might contain phosphate of lime, forwarded some of them to a London chemist to be analysed. He reported that they contained about 50 per cent. This important fact the Professor at once communicated to Mr. Lawes, the eminent manufacturer of mineral manures, who requested that a ton might be sent to him. The latter gentleman soon saw and profited by the commercial value of the discovery. What has been the result? Since that date the "Red Crag" has been thoroughly worked of its phosphate nodules, colossal fortunes have been realised, and a most interesting addition to our knowledge of a vertebrate, principally mammalian, fauna has been gained, and all by the lucky discovery of a geologist!—*Rev. G. Henslow.*

OTTOMAN DIPLOMACY IN FORMER TIMES.—The declaration of war of Mahomet IV to the Emperor Leopold I of Austria, at the close of the seventeenth century, is certainly a very curious retrospective document. Since then, if Turkey has failed to fulfil her promises regarding her public loans, she has, in some degree, learnt to modify her diplomatic phrases: "In the name of God, who reigneth in Heaven, We, Mola Mahomet, God on earth, glorious and powerful Emperor of Babylon and of Judea, Emperor of the East and West, King of all the Kings of this world and of the next, great King of holy Arabia, and of Mauritania; born, and gloriously crowned King of Jerusalem; Master and Possessor of the tomb of the Lord crucified by the unbelievers, We give thee our sacred word to thee, Roman Caesar, and to thee, King of Poland; to all the supporters and adherents of the (arrogant) red cock of Rome (the Pope), to the cardinals, to the bishops, and all their coadjutors of divers colours, that We are on the point of invading thy puny country. We are accompanied by 13 kings and 130,000 soldiers, infantry and cavalry, and with this army, of which neither thou nor thy allies can doubt, We shall crush and desolate thy miserable little country with the tramp of our horses' hoofs, and will deliver it up to fetters and to flames. Before all, We enjoin thee to wait for us in thy residence, Vienna, that we may there decapitate thee. And thou, petty King of Poland, act thou in the same manner. We shall annihilate thee, and all thy adherents, by murder, by slaughter, by fire, by pillage, and rapine, until the last human being calling himself Giaour shall disappear from off the face of the earth! Great and small shall be given up to the most dreadful torture, and afterwards to the most dishonouring deaths. We will take possession of thy petty state. We will ravage the land of the red cock. As for thee, and the King of Poland, ye shall live only until ye shall be convinced that We shall fully have accomplished this our determination. Given in our noble capital of Stamboul, a city enclosing no less than 1,659 streets, 190 hospitals, 1,000 baths, 999 fountains, 115 public monuments, 456 khans for strangers, 1,652 schools, 1,600 mills, and 4,122 mosques. Our grand and resplendent city covers a space of 4 miles, and is ornamented with 560 towers. Know ye that it was our ancestors who wrested it from the unbelievers, and who, after dishonouring the inhabitants, gave them all up to be massacred. It shall be our special care that it shall never again fall into the possession of Giaours. Given in the 25th year of our age, and in the 7th of our glorious reign.—MOLA MAHOMET."

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